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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,723	08/18/2003	Scott D. Walek	1653P1	4393

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EXAMINER

YAMNITZKY, MARIE ROSE

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/642,723	Applicant(s) WALCK ET AL.	
	Examiner Marie R. Yamnitzky	Art Unit 1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 46-60 and 81-95 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 46-60 and 81-95 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>rec'd 10 Oct 2003, and 05 Feb 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. This Office action is in response to applicant's election and amendment received November 08, 2004.

Applicant's amendment cancels claims 1-45 and 61-80, and adds claims 81-95.

Applicant's election without traverse of Group II, drawn to a laminated article, in the reply filed on November 08, 2004, is acknowledged.

Claims 46-60 and 81-95 are pending and read on the elected invention.

2. Claim 95 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The application as originally filed does not describe a light emitting material that is capable of up-conversion of infrared energy into visible radiation wherein the light emitting material has an absorption band in the range of greater than 0 to less than 400 nm.

3. Claims 59 and 95 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification does not enable one to make and/or use the invention as claimed in claim 59 which requires a dye-doped dendrimer that is capable of up-conversion of infrared

energy into visible radiation. The specification does not provide any specific examples of a dye-doped dendrimer that is an up-conversion material, and there are no references of record to demonstrate that dye-doped dendrimers capable of up-conversion are known.

The specification does not enable one to make and/or use the invention as claimed in claim 95, which requires the use of a light emitting material that is capable of up-conversion of infrared energy into visible radiation and that has an absorption band in the range of greater than 0 to less than 400 nm. There is no suggestion in the specification of light emitting materials that have the required combination of absorption and up-conversion capabilities/characteristics.

4. Claims 48, 50, 85, 93 and 94 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 48: The scope of light emitting materials as set forth in claim 48 is not clear. It is not clear if the possibilities set forth beginning in line 3 following "material selected from" are possibilities for the light emitting material as a whole, or are possibilities for the dopant. The scope of materials is also unclear because of the multiple occurrences of "and". It is not clear if certain materials must be used in combination.

Claim 50: The limitations imposed by the phrase "non-transparent" are not clear. It is not clear if "non-transparent" requires 0% transmission within the predetermined absorption band or merely requires less than 100% transmission within the predetermined absorption band, or if "non-transparent" places some other specific numerical limitation on the percent transmission.

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The specification does not clarify the scope of this limitation. Page 9 defines "transparent" as having a transmittance of more than 0% to 100% (see lines 2-4). Page 9 defines "opaque" as having a transmittance of 0% (see lines 7-8). Page 23 defines "substantially transparent" with reference to a "radiation source 60" as meaning at least 50% transmittance, and defines "substantially non-transparent" with reference to a "radiation source 60" as meaning less than 50% transmittance (see lines 14-34). The specification does not explicitly define "non-transparent" as used in claim 50. Based on the definition of "transparent" on page 9, anything having a transmittance greater than 0% is transparent, which implies that in order to be "non-transparent", a transmittance of 0% is required. However, based on the definitions set forth on page 23, an object having a transmittance of 0% up to, but not including, 50% may be considered to be "substantially non-transparent" in at least some instances.

Claims 85, 93 and 94: It is not clear if claims 85, 93 and 94 are limited to an article selected from "a commercial window... glass unit", or if these claims are limited to a laminated article which is capable of being used as, or capable of being used as part of, "a commercial window... glass unit."

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 46, 47, 49, 51-53, 81, 82 and 85-87 are rejected under 35 U.S.C. 102(b) as being anticipated by Meijer (US 2,878,606).

See the whole patent. In particular, see Figures 4-9, column 2, line 36-c. 3, l. 31 and c. 3, l. 38-60.

With respect to claim 47, Meijer does not disclose any specific light emitting materials, but the possibilities recited in claim 47 encompass all possible light emitting materials. Organo-metallic light emitting materials are a subset of organic light emitting materials, and if a material is not organic, it is inorganic.

With respect to claim 51, the recitation that the laminated article is an "automotive transparency" places no positive limitations on the structure/composition of the claimed laminated article.

With respect to claim 81, the function of the functional coating is not limited, and Meijer discloses laminates meeting the limitations of claim 81. Either of binder layers **12a** as shown in Fig. 6 of the patent, for example, meets the limitations of a functional coating as required by claim 81. The skim coat described in c. 3, l. 38-50 and the colored non-translucent pattern described in c. 51-60 also meet the limitations of a functional coating as required by claim 81.

With respect to the emission and absorption wavelength ranges set forth in claims 46, 86 and 87, Meijer anticipates these ranges in teaching that the fluorescent material is excited by ultraviolet rays and emits visible light.

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7. Claims 46, 47, 49, 51-53, 55-58, 60, 81-83, 85, 86, 88-91, 93 and 94 are rejected under 35 U.S.C. 102(b) as being anticipated by Downing et al. in *Science*, Vol. 273 (August 30, 1996), pp. 1185-1189.

See the whole article. In particular, see the first five paragraphs on page 1186, the first full paragraph on p. 1188, the paragraph bridging pp. 1188-1189, and Figures 3A and 5.

Downing et al. disclose laminated articles comprising layers of glass doped with up-converting fluorescent materials.

In a composite structure having a repeated sequence of three doped layers as described on p. 1188, each first and third layer meets the limitations of the first and second sheets required by the present claims, and the second layer meets the limitations of the interlayer required by the present claims. Further, in a composite structure having a repeated sequence of three doped layers, the first layer as well as any of the fourth or subsequent layers meets the limitations of the first and second sheets, with any of the layers between the first and fourth (or subsequent) layers meeting the limitations of the interlayer.

With respect to claims 51 and 58, the recitation that the laminated article is an "automotive transparency" places no positive limitations on the structure/composition of the claimed laminated article.

With respect to claims 81 and 89, the function of the functional coating is not limited. In Downing's laminated article wherein the first and third layers are considered to meet the limitations of the first and second sheets, any layer subsequent to the third layer meets the limitations of a functional coating. In Downing's laminated article wherein the first and fourth

layers are considered to meet the limitations of the first and second sheets, any layer subsequent to the fourth layer meets the limitations of a functional coating, and either of the two layers between the first and second sheets meets the limitations of a functional coating.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 48, 50 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meijer as applied to claims 46, 47, 49, 51-53, 81, 82 and 85-87 above, and for the further reasons set forth below.

The subset of light emitting materials required for claims 48 and 54 is not taught by Meijer, but these claims encompass fluorescent materials that were known in the art at the time of the present invention and that are capable of being excited by ultraviolet light to emit visible light. It would have been within the level of ordinary skill of a worker in the art at the time of the invention to select suitable fluorescent materials from known fluorescent materials having the excitation and emission characteristics required for the fluorescent material of Meijer's fluorescent sign.

With respect to claim 50, Meijer teaches that one of the two outer sheets of the laminate absorbs ultraviolet rays up to about 3500 angstrom units. That is, one of the two outer sheets

does not transmit 100% of the wavelengths within the absorption band of the light emitting material. Meijer does not explicitly disclose having an additional UV-absorbing layer between the UV-absorbing outer sheet and the light emitting material. Meijer teaches that the laminate may have more than three sheets of plastic (c. 3, l. 16-23). It would have been a *prima facie* obvious modification to one of ordinary skill in the art at the time of the invention to include one or more UV-absorbing sheets between the light emitting layer and the UV-absorbing outermost sheet in laminates having more than three sheets in order to provide one or more additional layers of protection against sun exposure. Duplication of parts has no patentable significance unless a new and unexpected result is produced.

10. Claims 46, 47, 49, 51-53, 55-58, 60, 81-86 and 88-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pollack (US 4,935,722) in view of Pinchok, Jr. et al. (US 5,653,903).

Pollack discloses the use of an up-converting fluorescent material in a windshield. Pollack teaches that the up-converting fluorescent material may be provided between two layers of a "conventional vehicle safety window laminate". See the whole patent, especially Figures 1-3, column 2, lines 11-29 and 43-52, and c. 2, l. 65-c. 3, l. 23.

Pollack does not further define the structure of a "conventional vehicle safety window laminate." Various prior art patents disclose conventional vehicle safety window laminates, with the patent to Pinchok, Jr. et al. being an example of one such patent. As can be seen by the patent to Pinchok, Jr. et al., the structure of the presently claimed laminated article, absent the at

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least one light emitting material, encompasses conventional vehicle safety window laminates.

For example, see column 3, line 52-c. 4, l. 49 of the Pinchok, Jr. patent.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to position an up-converting fluorescent material as taught by Pollack between two layers of a conventional window laminate structure such as taught by Pinchok, Jr. et al., thereby providing a laminated article meeting the limitations of present independent claims 46 and 55, and various claims dependent therefrom.

11. Applicant is advised that should claim 93 be found allowable, claim 94 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

12. Miscellaneous:

In claim 47, the examiner suggests inserting --emitting-- after “light” in the phrases “organic light materials” and “organo-metallic light materials”.

13. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

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The current fax number for Art Unit 1774 is (703) 872-9306 for all official faxes.
(Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
January 21, 2005

Marie R. Yamnitzky

MARIE YAMNITZKY
PRIMARY EXAMINER

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